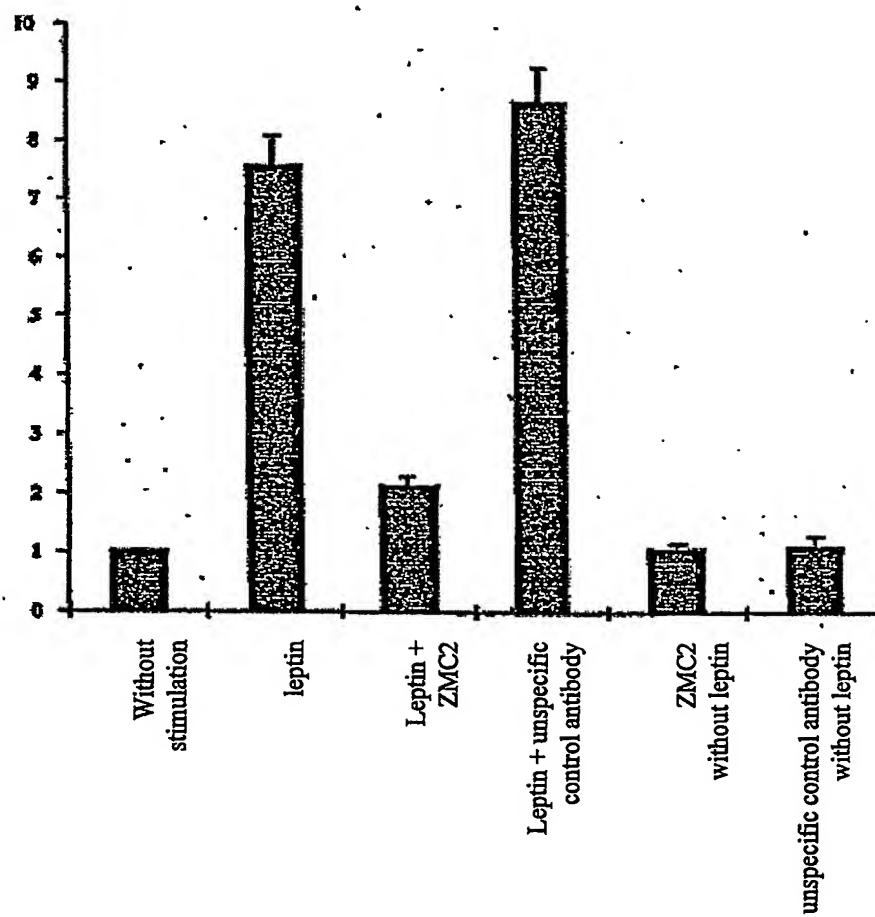


1/20

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Figure 1

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2/20

A)

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XHNPIPMPPAAAGLLLLAAQPAMAEVMTQSPKFMSTSIGDRVNITCKAT
 QNVRTAVTWYQQKPGQSPQALIFLASNRHTGVPARFTGSGSGTDFLTIN
 NVKSEDLADYFCLQHWNYPLTFGSGTKLEIKRADAAPT VSI FPPSSEQLT
 SGGASVVCFLNNFYPKDINVWKIDGSRQNGVLNSWTDQDSKSTYSMS
 STLTLTKDEYERHNSYTCEATHKTSTSPIVKSFNRGEC**SRVKRXQXSG
 GPGTPIRPIGXPHYNSLGGGFQ

B)

10

DNA: NANGTCATAATCCAATACCTATGCCTACGGCAGCCGCTGGATTGTTATTAC
 +3: X H N P I P M P T A A A G L L L L
 pComb3 vector SacI V_L(κ) primer
 DNA: TCGCTGCCCAACCAAGCCATGGCGAGCTCGTGATGACCCAGTCTCCAAAAT
 +3: A A Q P A M A E L V M T Q S P K F

15

DNA: TCATGTCCACATCAATAGGAGACAGGGTCAATATCACCTGCAAGGCCACTC
 +3: M S T S I G D R V N I T C K A T Q

20

DNA: AGAATGTTCTGACTGCTGTACCTGGTATCAACAGAAACAGGGCAGTCTC
 +3: N V R T A V T W Y Q Q K P G Q S P

25

DNA: CTAAGCACTGATTTTCTTGGCATCCAACCGGCACACTGGTGTCCCTGCTC
 +3: Q A L I F L A S N R H T G V P A R

30

DNA: GATTCACAGGCAGTGGATCTGGGACAGATTCACTCTCACCATTACAATG
 +3: F T G S G S G T D F T L T I N N V

DNA: TGAAATCTGAAGACCTGGCAGATTATTTCTGTCTACAACATTGGAATTATC
 +3: K S E D L A D Y F C L Q H W N Y P

35

DNA: CTCTCACGTTCTGGGCTCGGGGACAAAGTTGGAAATAAAACGGGCTGATGCTG
 +3: L T F G S G T K L E I K R A D A A

DNA: CACCAACTGTATCCATCTTCCCACCATCCAGTGAGCAGTTAACATCTGGAG
 +3: P T V S I F P P S S E Q L T S G G

40

DNA: GTGCCTCAGTCGTGTGCTTCTTGAACAACCTTACCCCAAAGACATCAATG
 +3: A S V V C F L N N F Y P K D I N V

DNA: TCAAGTGGAAGATTGATGGCAGTGAACGACAAAATGGCGTCCTGAACAGTT
 +3: K W K I D G S E R Q N G V L N S W
 BclI

45

DNA: GGACTGATCAGGACAGCAAAGACAGCACCTACAGCATGAGCAGCACCTCA
 +3: T D Q D S K D S T Y S M S S T L T

DNA: CGTTGACCAAGGACGAGTATGAACGACATAACAGCTATACCTGTGAGGCCA
 +3: L T K D E Y E R H N S Y T C E A T

50

C_L(κ) primer

DNA: CTCACAAGACATCAACTTCAACCATTTGTCAAGAGCTTCAACAGGGGAGAGT
 +3: H K T S T S P I V K S F N R G E C

Stop XbaI NotI KpnI

DNA: GTTAGTAATCTAGAGTTAAGCGGCCGCAATCGAGGGGGGGCCCGGTACCCC
 +3: * * S R V K R P Q S R G G P V P Q

55

DNA: AATTCGCCCTATAGGGGNGCCGTATTACAATTCACTGGGCGGGCGGTTTCA
 +3: F A L * G X R I T I H W A A V F X

60

DNA: AN
 +3:

Figure 2

3/20

A)

LAXRGGGRKIXFXRETVIMKYLXAYGPAAGLLLLLAAQPAMAQVKLLESGP
 GLVAPSESLSITCTISGFSLTDDGVSWIRQPPGKLEWLGVWGGGSTYF
 NSLFKSRLSITRDNSKSQVFLEMDSLQDDDTAMYCAKHDGHETMDYWGQ
 GTSVTVSSSKTTPPSVYPLAPGSAAQTNSMVTLGCLVKGYFPEPVTVTWN
 SGLSSGVHTFPAVLQSDLYTLSSSVTVPSSTWPSSETVTCNVAHPASSTK
 VDKKIVPRDCTSHHHHHH*ASLVVAVALHSFVXIKANRRPAX

B)

DNA: TTGGCCNCCCGCGGTGGCGCCGCAAAATTNTATTNTCAAGGGAGACAGTC
 -1: L A X R G G G R K I X F X R E T V

DNA: ATAATGAAATACCTTTTNGCCTACGGGCCAGCGCTGGATTGTTATTACTC
 -1: I M K Y L X A Y G P A A G L L L L
 pComb3 vector XhoI V_hb primer

DNA: GCTGCCCAACCAGCCATGGCCCAGGTGAAACTGCTCGAGTCAGGACCTGGC
 -1: A A Q P A M A Q V K L L E S G P G

DNA: CTGGTGGCGCCCTCAGAGAGCCTGTCCATCACATGCACATATCTCAGGGTTC
 -1: L V A P S E S L S I T C T I S G F

DNA: TCATTAACCGACGATGGTGTAAAGCTGGATTCGGCAGCCTCCAGGAAAGGGT
 -1: S L T D D G V S W I R Q P P G K G

DNA: CTGGAGTGGCTGGGAGTAATATGGGGTGGTGAAGCACATACTTTAATTCA
 -1: L E W L G V I W G G G S T Y F N S

DNA: CTTTTCAAATCCAGACTGAGCATCACCAGGGACAACCTCTAAGAGCCAAGTT
 -1: L F K S R L S I T R D N S K S Q V

DNA: TTCTTAGAAATGGACAGTCTACAACTGATGACACAGCCATGTACTACTGC
 -1: F L E M D S L Q T D D T A M Y Y C

DNA: GCCAAACATGACGGACACGAGACTATGGACTATTGGGGTCAAGGAACCTCA
 -1: A K H D G H E T M D Y W G Q G T S

DNA: GTCACCGTCTCCTCATCCAAAACGACACCCCCATCTGTCTATCCACTGGCC
 -1: V T V S S S K T T P P S V Y P L A

DNA: CCTGGATCTGCTGCCAACTAACTCCATGGTGACCTGGGATGCCTGGTC
 -1: P G S A A Q T N S M V T L G C L V

DNA: AAGGGCTATTTCCCTGAGCCAGTGACAGTGACCTGGAACCTCTGGATCCCTG
 -1: K G Y F P E P V T V T W N S G S L

DNA: TCCAGCGGTGTGCACACCTTCCCAGCTGTCTGCAGTCTGACCTCTACACT
 -1: S S G V H T F P A V L Q S D L Y T

DNA: CTGAGCAGCTCAGTGACTGTCCCTCCAGCACCTGGCCCAGCGAGACCGTC
 -1: L S S S V T V P S S T W P S E T V

DNA: ACCTGCAACGTGCCCCCGGCGCAGCAGCACCAGGTGGACAAGAAAATT
 -1: T C N V A H P A S S T K V D K K I
 ClaI(γ1)Primer SpeI His tag Stop

DNA: GTGCCAGGGATTGTACTAGTCATCATCATCATCATTAAGCTAGCCTA
 -1: V P R D C T S H H H H H H * A S L

DNA: GTGGTGGCGGTGGCTCTCCATTCGTTTGTGANGATAAAGGCCAATCGNAGA
 -1: V V A V A L H S F V X I K A N R R

DNA: CCTGCNCNA
 -1: P A X

Figure 3

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A)

ATNCTTTNTTGTTCCTTTCTATGCGGCCAGCCGGCCATGGCCCAGGTCCAGCTG
CAGGAGTCAGGAACTGAAGTGGTAAAGCCTGGGGCTTCAGTGAAGTTGTCCT
GCAAGGCTTCTGGCTACATCTTCACAAGTTATGATATAGACTGGGTGAGGCAG
5 ACGCCTGAACAGGGACTTGAGTGGATTGGATGGATTTTTCCTGGAGAGGGGA
GTACTGAAATACAATGAGAAAGTTCAAGGGCAGGGCCACACTGAGTGTAGACAA
GTCCTCCAGCACAGCCTATATGGAGCTCACTAGGCTGACATCTGAGGACTCTG
CTGTCTATTTCTGTGCTAGAGGGGACTACTATAGGCGCTACTTTGACTTGTGGG
GCCAAAGGGACCACGGTCACCGTCTCCTCATGTGGAGGCGGTTTCAGGCGGAGG
10 TGGCTCTGCGGTGGCGGATCTGACATTGAGCTCACCCAGTCTCCAGCAATCA
TGTCTGCATCTCCAGGGGAGAGGGTCAACATGACCTGCAGTGCCAGCTC
AAGTATACGTTACATATATTGGTACCAACAGAAGCCTGGATCCTCCCCCA
GACTCCTGATTTATGACACATCCAACGTGGCTCCTGGAGTCCCTTTTCGC
TTCAAGTGGCAGTGGGTCTGGGACCTCTTATTCTCTACAATCAACCGAAT
15 GGAGGCTGAGGATGCTGCCACTTATTACTGCCAGGAGTGGAGTGGTTAT
CCTCTCACGTTTCGGCTCGGGCACCAAGCGGGAAATCAAACGGGCGGCCGC
AGGTGCGCCGGTGCCGTATCCGGATCCGCTGGAACCGCGTGCCGCATAGACT-
GTTGAA

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B)

MAQVQLQESGTEVVKPGASVKLSCKASGYIFTSYDIDWVRQTPEQGLEWIG
WIFPGEGST EYNEKFKGRATLSVDKSSSTAYMELTRLTSEDSAVYFCARG
25 DYYRRYFDLWGQGT TVTVSSGGGGSGGGGSGGGGSDIELTQSPAIMSASP
GERVTMTCSASSSIRYIYWYQQKPGSSPRLLIYDTSNVAPGV PFRFSGSG
SGTSYSLTI NRMEAEDAATYYCQ_HEWSGYPLTFGSGTKREIKRAAAGAPVP
YPDPLEPR

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Figure 4

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A)

5 tcgctgcccaaccagccATGgcccaggtgaaactgctcgagtcaggacctggcctggtg
cgccctcagagagcctgtccatcacatgcactatctcaggggtctcattaaccgacgatg
gtgtaagctggattcggcagcctccaggaaagggctctggagtggtgggagtaatatggg
gtgggtggaagcacatactttaattcacttttcaaatccagactgagcatcaccagggaca
actctaagagccaagttttcttagaaatggacagtctacaaactgatgacacagccatgt
 10 tcaccgtctcctcatccaaaacgacacccccatctgtctatccactggccccctggatctg
ctgcccaaactaactccatggtgaccctgggatgcctggtcaagggctatttccctgagc
cagtgacagtgaccctggaactctggatccctgtccagcggtgtgcacaccttcccagctg
tcctgcagtctgacctctacactctgagcagctcagtgtcccctccagcacctggc
 15 ccagcgagaccgtcacctgcaacgttgcccacccggccagcagcaccaaggtggacaaga
aaattgtgcccagggattgtactagtgggtggcggaggtagtgggtggcggaggtagcgggtg
gcggaggttctgggtggcggaggttccgaattcctcgaggtgcccatccaaaaagtccaag
atgacaccaaaaaccctcatcaagacaatttgtcaccaggatcaatgacatttcacacacgc
agtcagtctcctccaaacagaaagtcaccgggttggacttcattcctgggctccacccca
 20 tctgaccttatccaagatggaccagacactggcagtctaccaacagatcctcaccagta
tgccttccagaaacgtgatccaatatccaacgacctggagaacctccgggatcttcttc
acgtgctggccttcttaagagctgccacttgccctgggccagtggcctggagaccttgg
acagcctggggggtgtcctggaagcttcaggctactccacagaggtggtgccctgagca
ggctgcaggggtctctgcaggacatgctgtggcagctggacctcagccctgggtgcacta
 25 gtcatcatcatcatcatcatTAAgctagcctagtggtggcggtggctctcca

B)

30 Maqvkllesgpglvapsesisitctisgfsitddgvswirgppgkglewlgviwggsty
fnslfksrlsitrdnsksqvflemdslqtddtamyycakhdghetmdywggtsvtvss
kttppsvyplapgsaagtnsmvtlgclvkyfepeptvtwnsgslssgvhtfpavlqsdl
 35 ytlsssvtpsstwpsetvtcnvahpasstkvdkivprdctsggggsgggsgggsg
ggseflevpigkvqddtktliktivtrindishtqsvsskqkvtgldfipglhpiltlsk
mdqtlavyqqiltsmpsrnviqisndlenlrdlhvlafskschlpwasgletldslggv
 40 leasgystevalsrlggslqdmlwqldlspqctshhhhh

Figure 5

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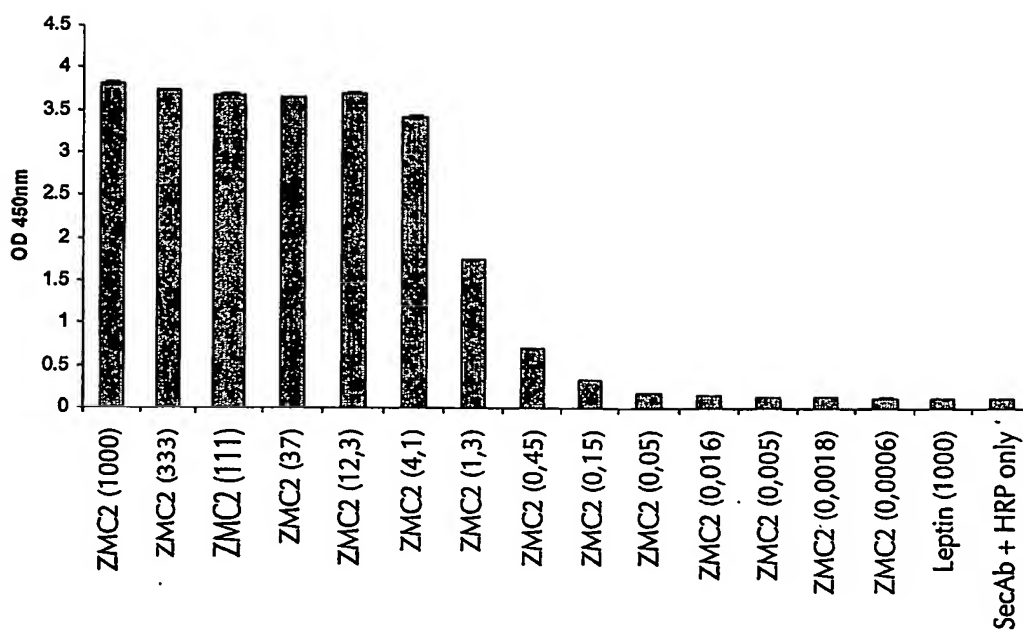


Figure 6

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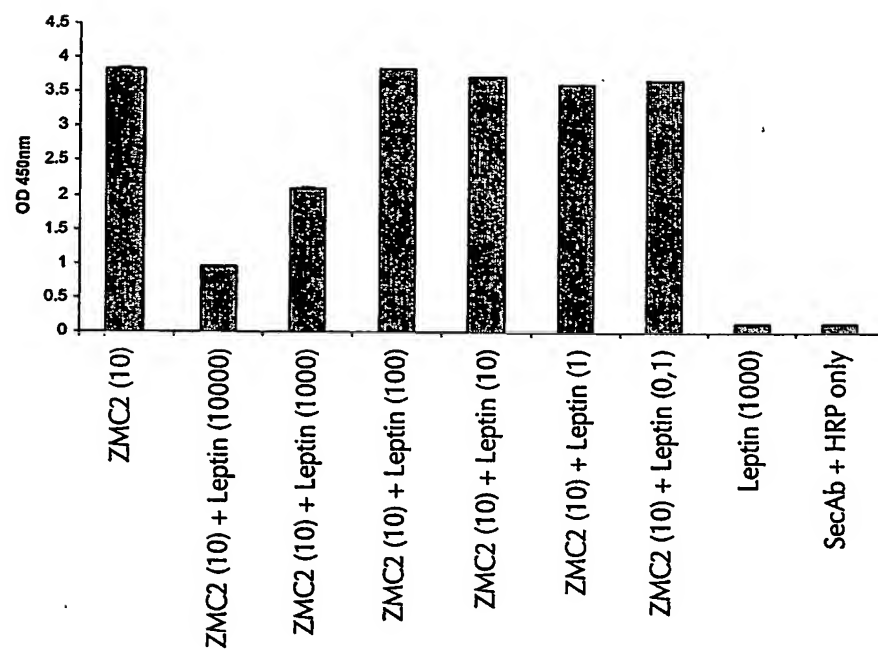


Figure 7

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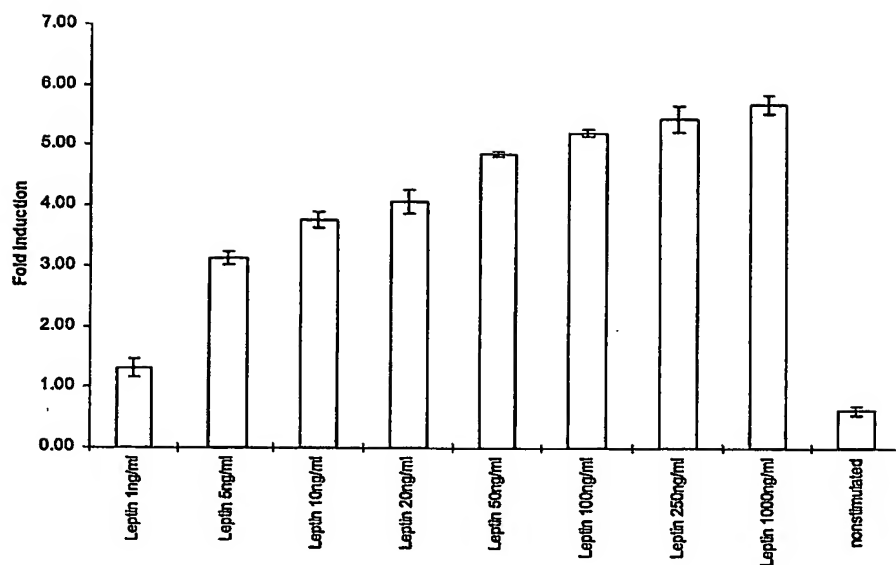


Figure 8

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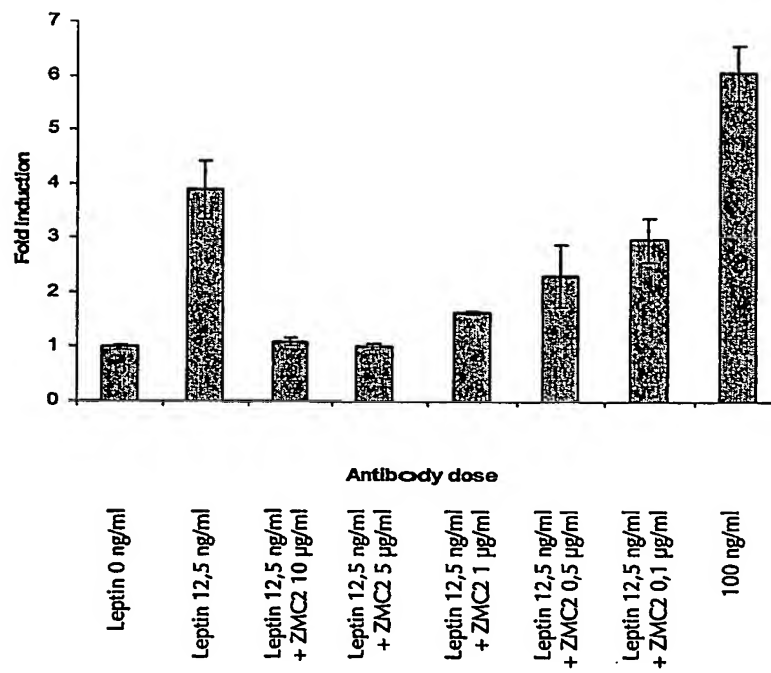


Figure 9

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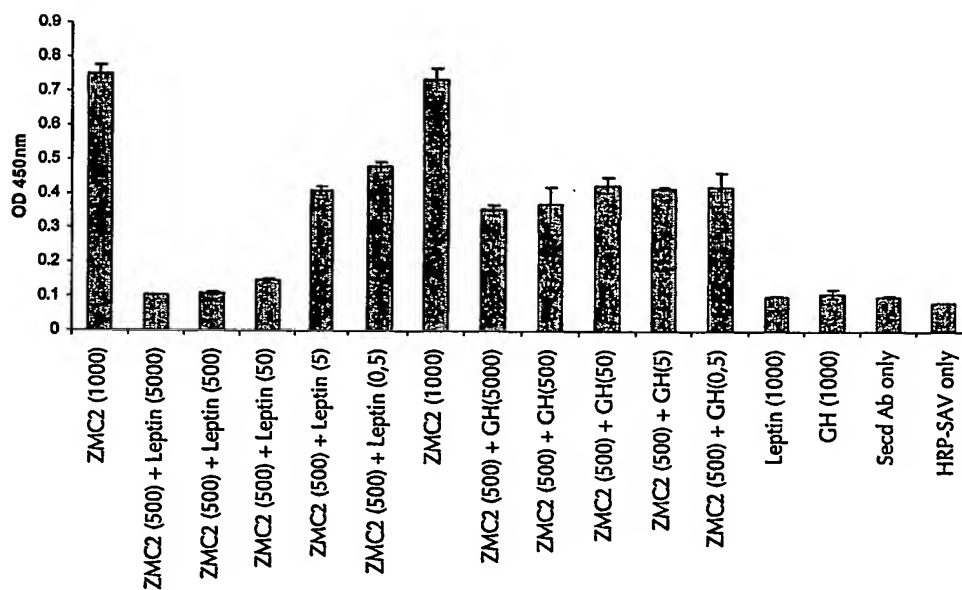


Figure 10

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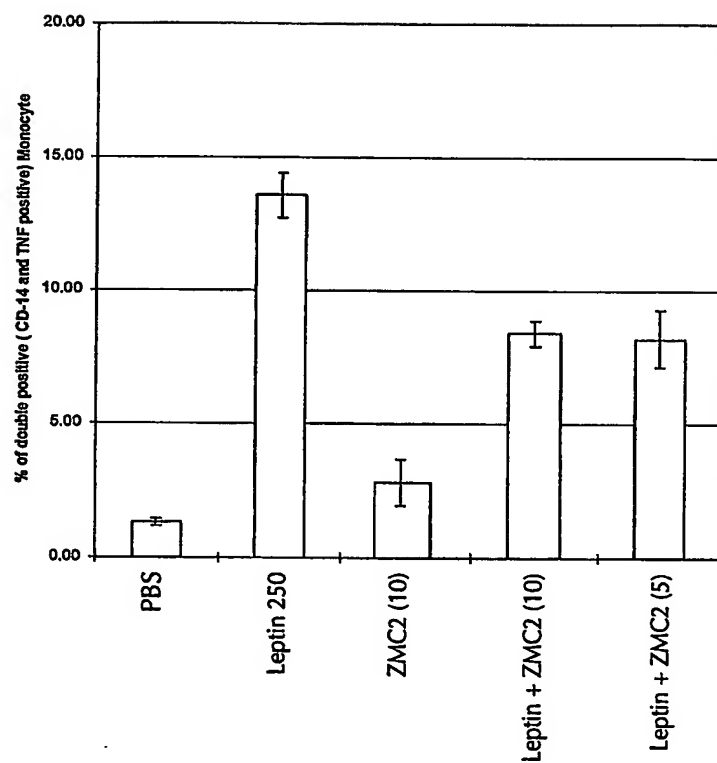
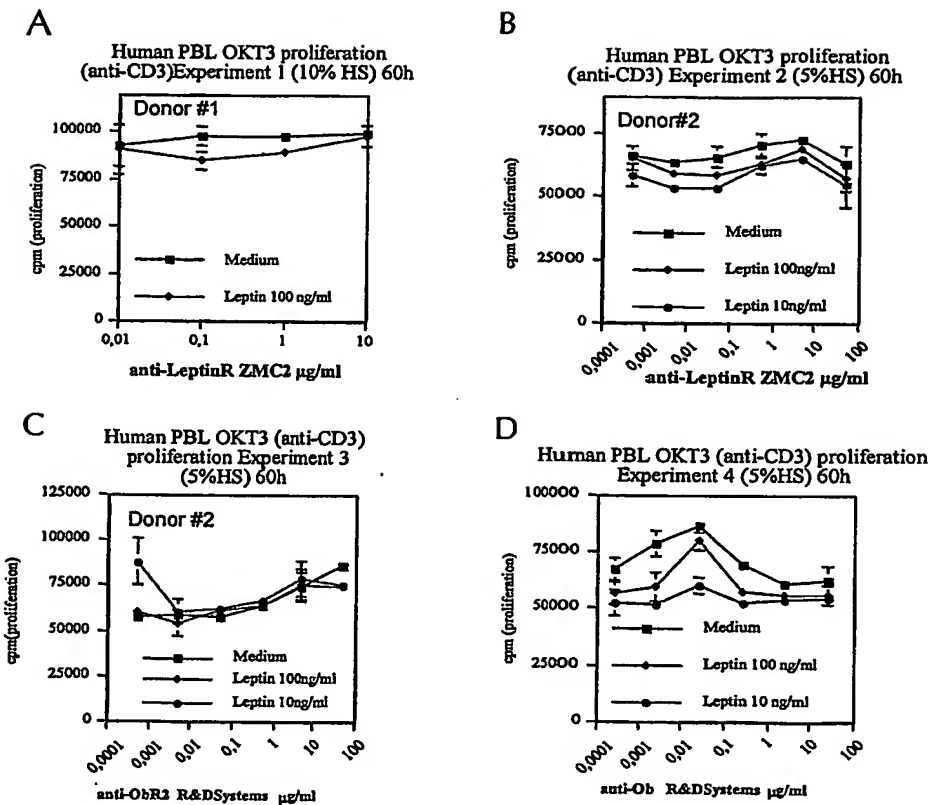


Figure 11

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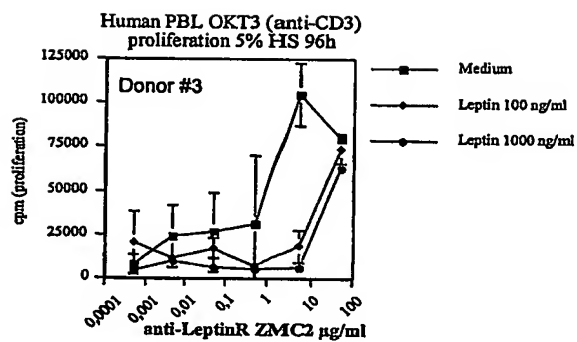
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Figure 12

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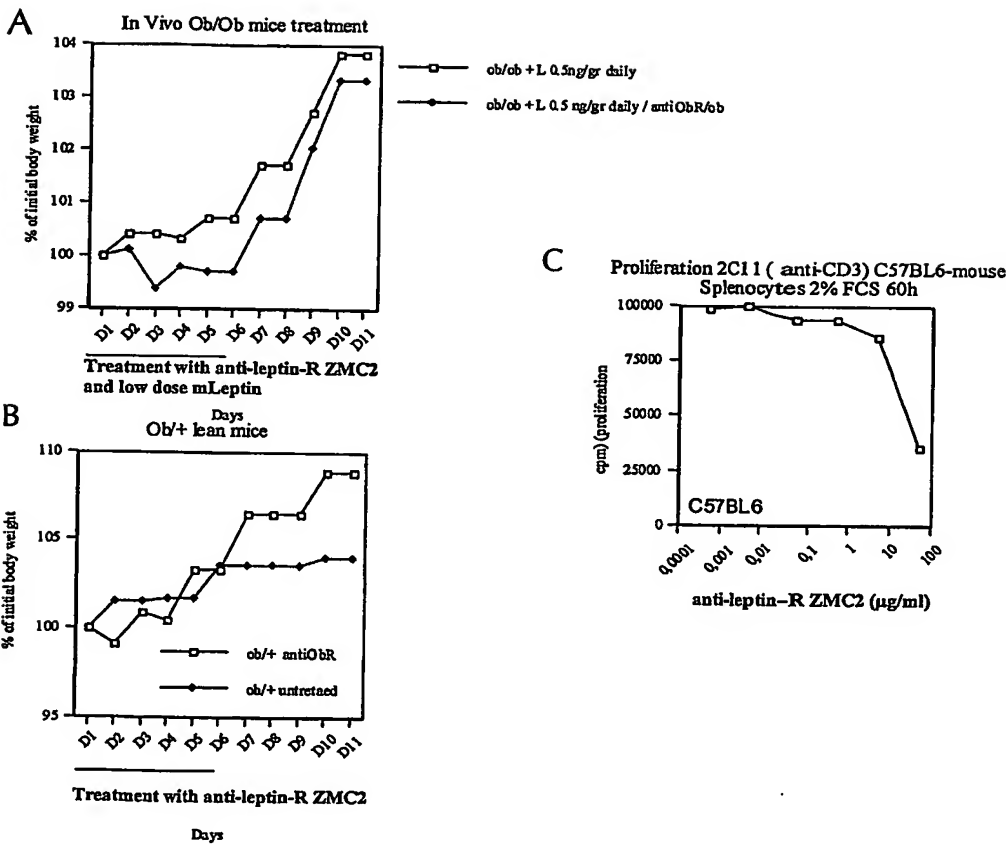
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Figure 13

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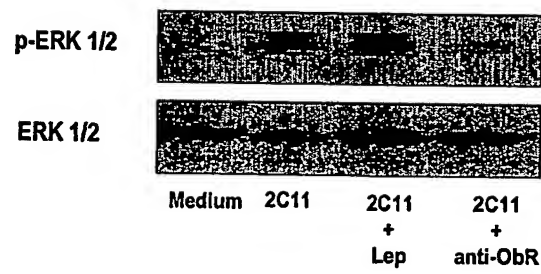
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Figure 14

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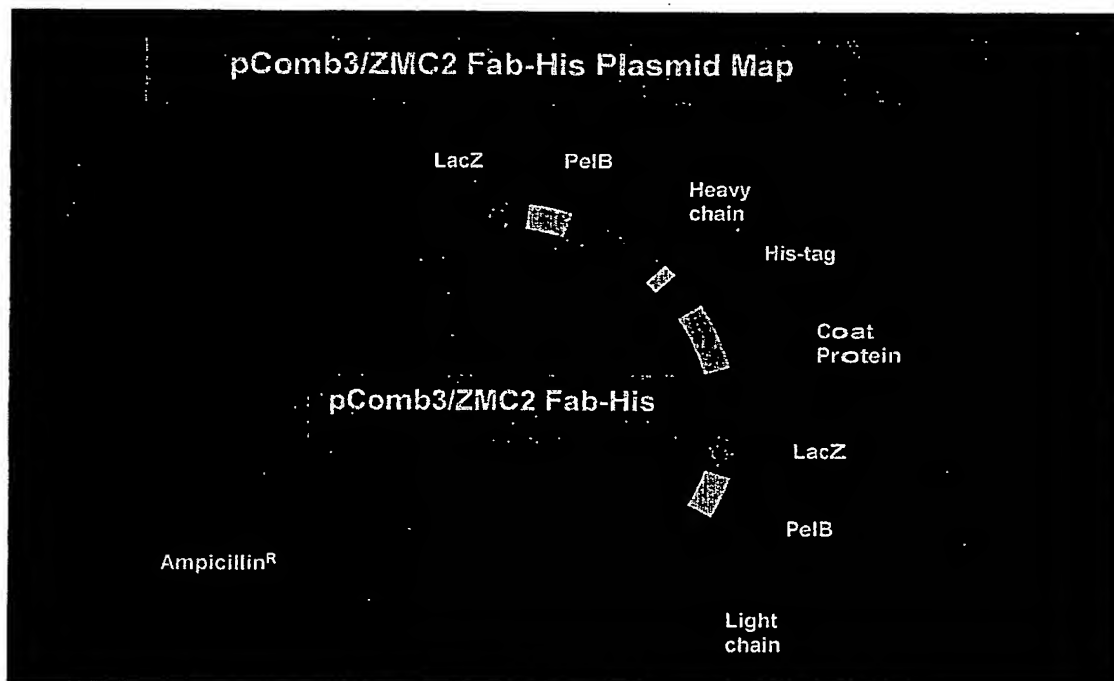
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Figure 15

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Figure 16

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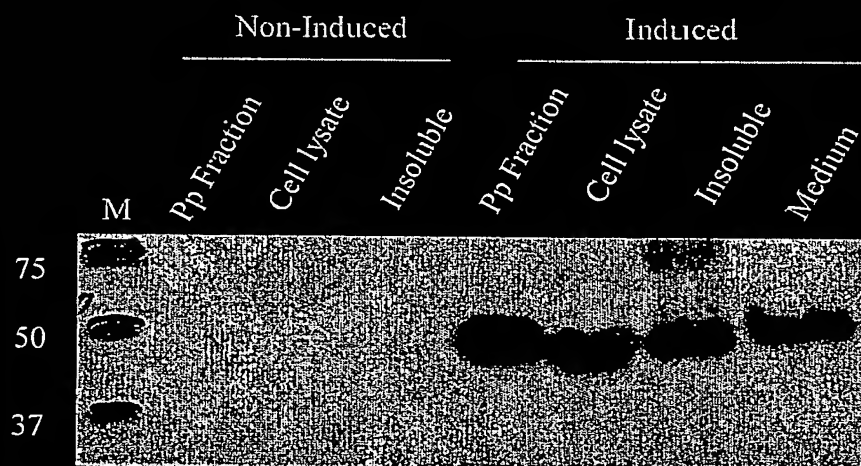
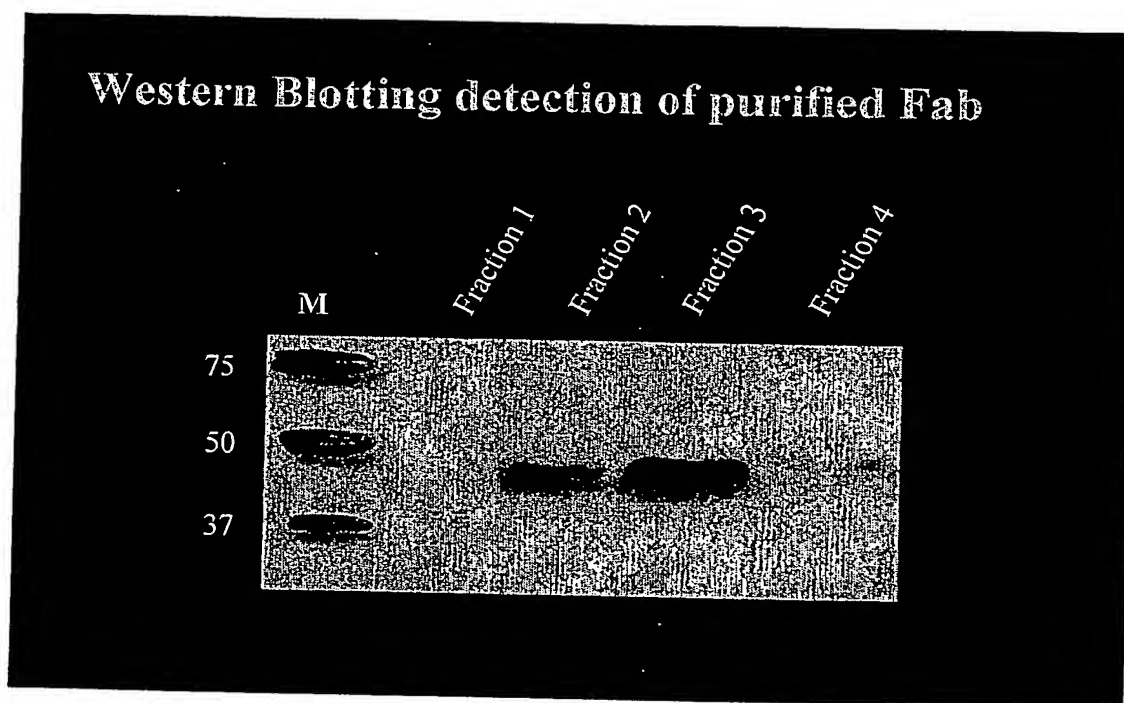
Western Blotting detection of recombinant Fab

Figure 17

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Figure 18

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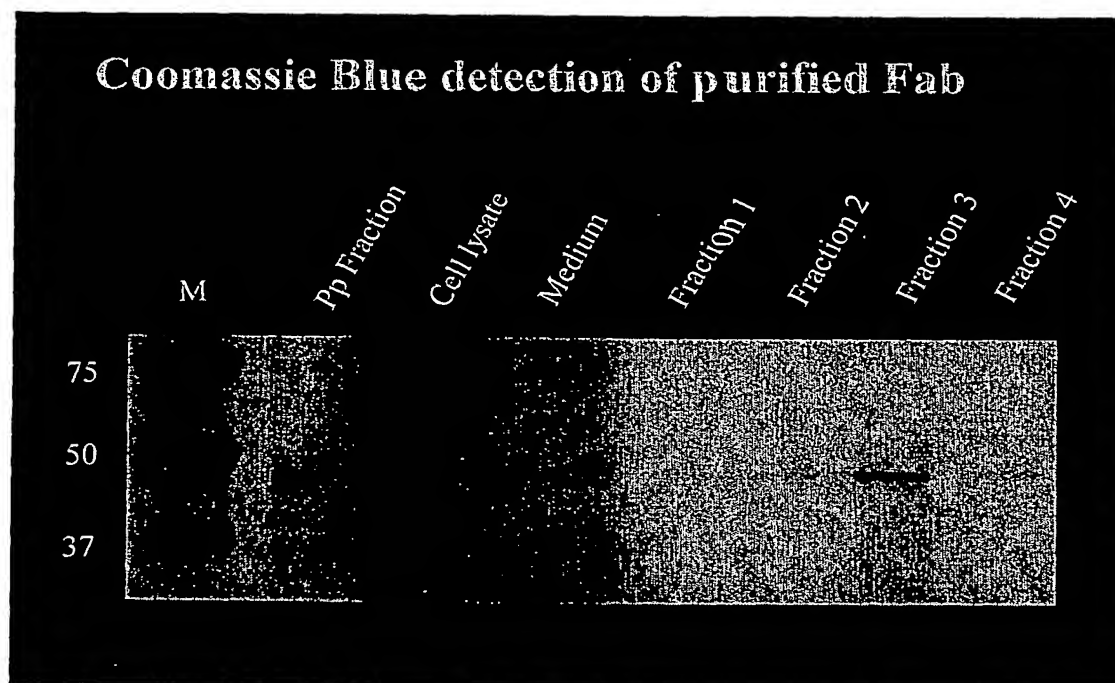
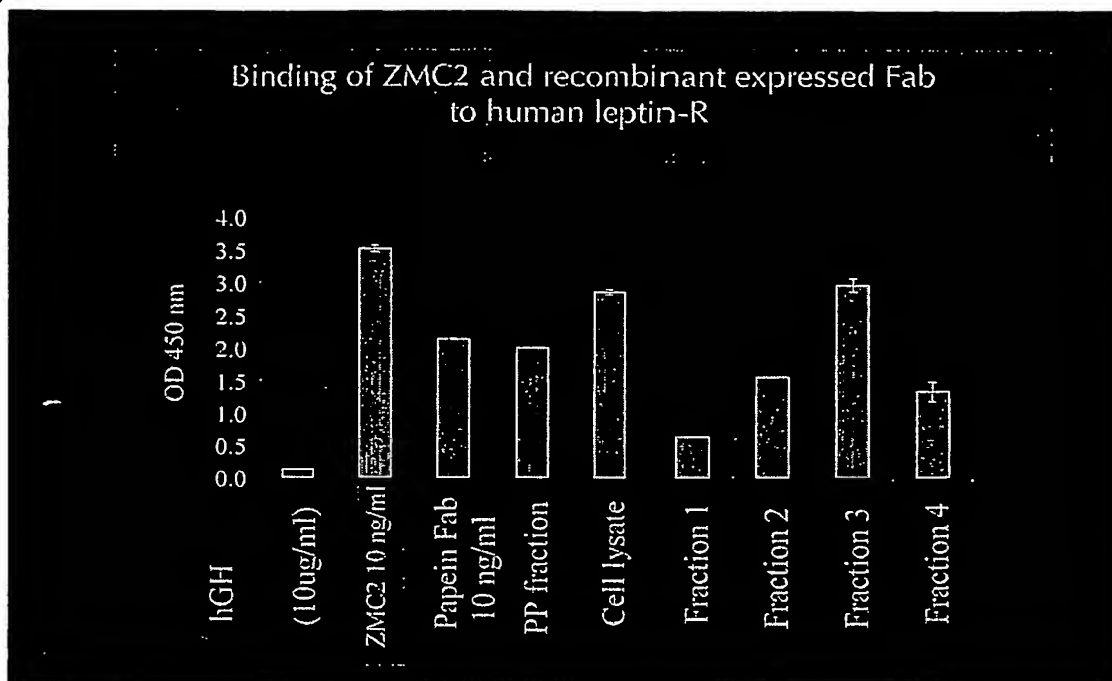


Figure 19

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A)



B)

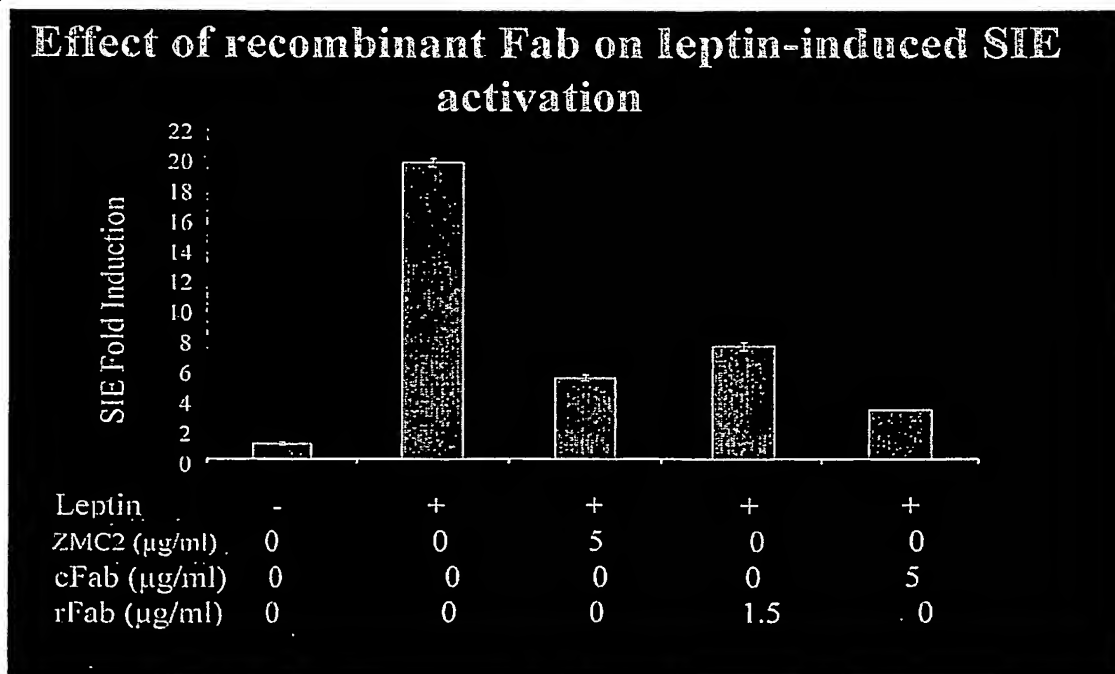


Figure 20